SPECIFICATION
产品规格书

Model: BTP-LC-RTD2513V5.0

Approved by		
Prepared by 编写	Checked by 审核	Approved by 批准

Please send the original back to us after you have approved and singed .

客户承认签章后敬请寄回正本一份

Approved by customer		
Comments 确认意见	Approved by 批准签字	Company's seal 盖章
Customer's Name:		

Content(目录)

Revision History

VERSION	DESCRIPTION	DATE
V1.0	First issued 首次发行	2026.6.11

1.General Description(概述)

BTP-LC-RTD2513V5.0 is a motherboard with LCD driver.

This motherboard is suitable for LVD (low voltage differential signal interface and EDP interface LCD panels, and the resolution is up to 1920X1080@60H.

The motherboard supports DVI*1+HDMI*1+VGA*1 port inputs,

1. HDMI supports 1.4/standard (HDCP1.4);

2. VGA supports the reproduction of analog R, G, B input signals with the highest resolution up to WUXGA, color reproduction can support up to 24bit, up to 16.7 million pixels, and ADC frequency up to 165MHz. It also has special functions such as DCR (Dynamic Contrast Adjustment), color enhancement, color engine, etc., which makes the color reproduction more realistic, brighter and more vivid, and supports HDCP function.

BTP-LC-RTD2513V5.0 是一款液晶显示器驱动主板。

该主板适用于 LVDS（低压差分信号）接口的液晶面板，分辨率最高支持到 1920X1080@60Hz。

该主板支持 DVI*1+HDMI*1+VGA*1 端口输入：

1，HDMI 支持 1.4/标准（HDCP1.4)；

2，VGA 支持最高分辨率可达 WUXGA 的模拟 R、G、B 输入信号的再现，色彩再现可支持到 24bit,最高可达 16.7 百万像素,ADC 频率达 165MHz。并具有 DCR(动态对比度调节),彩色增强，色彩引擎等特殊功能，使色彩再现更逼真、更鲜艳、更生动,同时支持 HDCP 功能。

2.Configuration & General Precautions(使用注意事项)

- For safety issue, please keep the board 6.0mm away from metal parts of the TV at least.
- 基于安全考虑，请在安装时确保板卡与其他金属材料保持 6.0mm 以上的距离。
- Protect the board from static electrostatic in care of damage to the IC.
- 请使板卡远离静电以免损坏 IC。
- Keep the board away from conductor when it is working.
- 确保板卡工作时远离导体。
- Don’t press, distort or disassemble the board.
- 请勿强压、扭曲或拆解板卡。
- Clean the board with soft dry cloth when it’s dirty.
- 若板卡有污渍，请用干布擦拭。
- Don’t switch on the power supply before panel is correctly connected.
- 正确连接好屏线前请勿通电。
- Relative humidity:≤80%.
- 相对湿度：≤80%。
- Storage temperature: -10～80℃.
- 储存温度：-10～80℃。
- Operation temperature: 0～60℃.
- 工作温度：0～60℃
- The brightness of panel is influenced greatly by temperature, you should measure it after power on 10~30 minutes.
- 因屏的亮度易受温度影响，请在开机 10~30 分钟后再测量。
- Keep the board surface clean. Check the appearance of the board if there has any defective parts, such as damaged, weighty nick, etc.
- 保持产品表面整洁。检查产品外观是否有明显品质不良存在，如：破损，严重划痕等。

3. Main features (主要特性)

Main Chip	RTD2513 Series		
Support Signal	HDMI	480i,480p,576i,576p,720p,1080i,1080p	
	PC	Maximum Supported Resolution	1920*1200
		Colour	32bit
		Row synchronization range	31.5-94.038KHz
		Field synchronization scope	60-75Hz
	Input, Output	Audio Input/Audio Output	External copper sleeve, BLACK, 90°, PJ-325
		HDMI	Surface-mount HDMI terminal, horizontal
		VGA	VGA, SMD, sunk board type, dual-row, forward orientation, 90°
Source	Power Input	12V DC Voltage	
	Drive-out voltage	Available in 12V,10V,5V, or 3.3V; factory defaults to 5V.	
	Power Operation	Normal operating mode, Low-power mode	
	Mainboard standby power consumption	<0.25W	
Key	OSD menu	Brightness, Contrast, Auto Correction, Phase, Clock, Row/Field Position, Function Settings, Reset, etc.	
	OSD language	Chinese, English, French, German, Italian, Spanish, Russian, Korean, Japanese, and more	
	Key	POWER, AUTO, MENU, UP, DOWN – 5 keys/7 keys (can be adjusted to 5 or 6 keys via software as per customer requirements)	

Note:
1.Licenses involved in specifications above are supposed to be obtained by customers themselves.

2.When the screen drive current is ⩾ 1000mA, please contact the ZVT engineer.

4. BOARD PICTURE(板卡外观图)

N/A

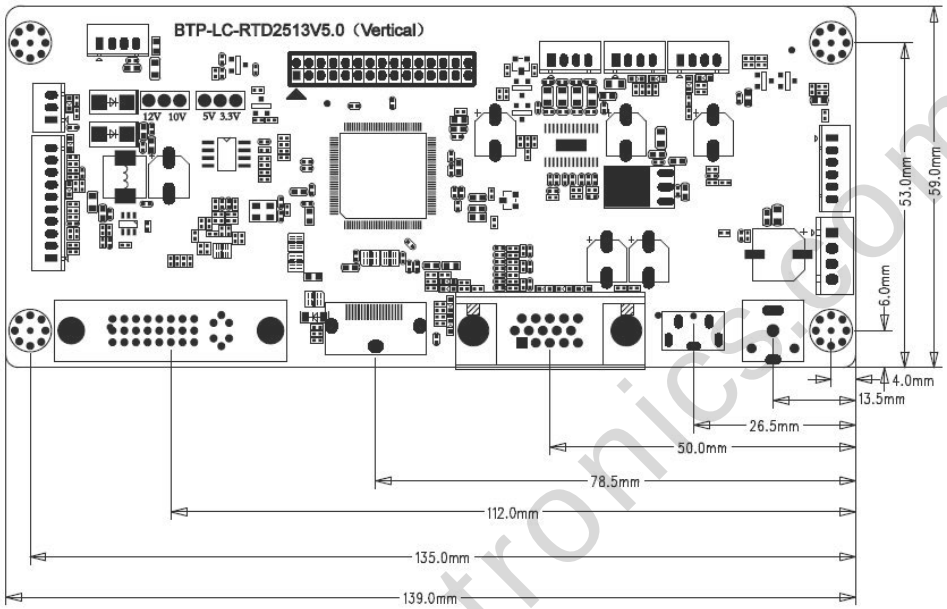
Pictures are for reference only, specific to prevail in kind.

图片仅供参考，请以实物为准。

上图标注数字编号的各接口功能

数字编号	接口功能

5. PCB Dimension(结构尺寸图)

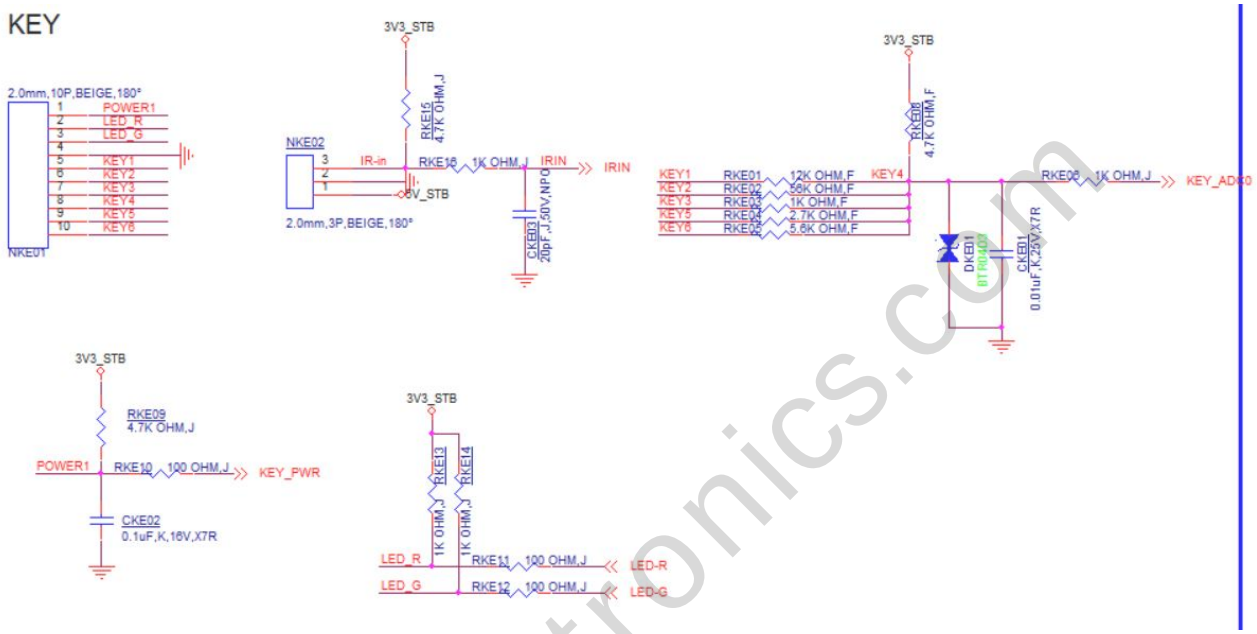


Unit:mm(Unit:mm)
Relevantdimensionsandspecificationsofthecontrolboard(PCB)
1、PCBthickness+maximumcomponentheight≤16mm
2、PCBlength=139mm
3、PCBwidth=59mm
4、PCBboardthickness=1.6mm
Screwholespecifications:screwholetype,holesize,andcoordinatesrefertothestructuraldiagram

6.Schematics Of Lamp Board & Key Board (指示灯&按键的原理图)

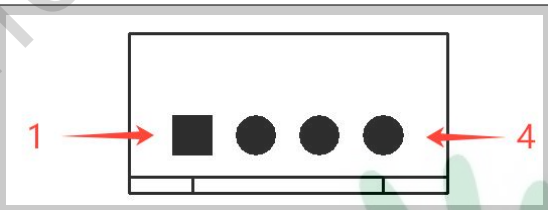
The following schematic is for reference only:

下列原理图仅供参考:



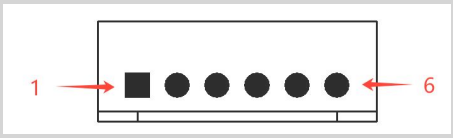
7.Interface Definition(接口定义)

7.1 JP8 (4PIN/2.0): DC IN　POWER INTERFACE(内置 DC 电源接口)



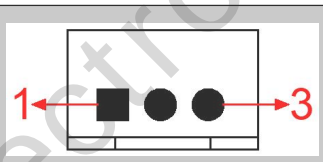
NO.(引脚)	Symbol(定义)	Description(描述)
1	DC IN	DC IN Power Supply
2	DC IN	DC IN Power Supply
3	GND	Ground
4	GND	Ground

7.2 JP4(6PIN/2.0): BACKLIGHT CONCTOL INTERFACE（背光驱动接口）



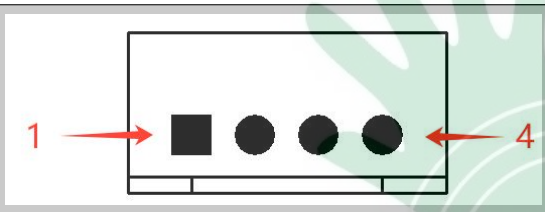
NO.(引脚)	Symbol(定义)	DESCRIPTION
1	GND	Ground
2	GND	Ground
3	ADJ	Back Light Adjust
4	BL_EN	Back Light ON/OFF
5	DC_IN	LED Power Supply OUT
6	DC_IN	LED Power Supply OUT

7.3 JP11 (3PIN/2.0):Infrared remote control interface(红外摇控接口)



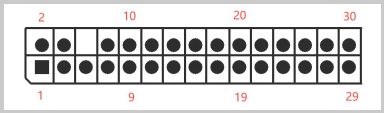
NO.(引脚)	Symbol(定义)	Description(描述)
1	5V	5V 电源输入
2	GND	接地脚
3	IR	红外输入

7.4 NW03(4PIN/2.0)5V POWER IN(5V 输入）



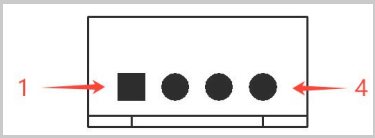
NO.(引脚)	Symbol(定义)	Description(描述)
1	GND	Ground
2	GND	Ground
3	5V	5V Power Supply
4	5V	5V Power Supply

7.5 JN2(2×15PIN/2.0): LVDS INTERFACE CONNECTOR (LVDS 接口)



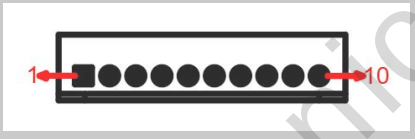
NO.(引脚)	Symbol(定义)	Description(描述)
1	VCC	Power Supply for Panel
2	VCC	
3	VCC	
4	NC	NC
5	GND	Ground(地)
6	GND	Ground(地)
7	TXAON	LVDS ADD 0- Signal
8	TXAOP	LVDS ADD 0+ Signal
9	TXA1N	LVDS ADD 1- Signal
10	TXA1P	LVDS ADD 1+ Signal
11	TXA2N	LVDS ADD 2- Signal
12	TXA2P	LVDS ADD 2+ Signal
13	GND	Ground(地)
14	GND	Ground(地)
15	TXACN	LVDS ADD C- Signal
16	TXACP	LVDS ADD C+ Signal
17	TXA3N	LVDS ADD 3- Signal
18	TXA3P	LVDS ADD 3+ Signal
19	TXB0N	LVDS BDD 0- Signal
20	TXB0P	LVDS BDD 0+ Signal
21	TXB1N	LVDS BDD 1- Signal
22	TXB1P	LVDS BDD 1+ Signal
23	TXB2N	LVDS BDD 2- Signal
24	TXB2P	LVDS BDD 2+ Signal
25	GND	Ground(地)
26	GND	Ground(地)
27	TXACN	LVDS ADD C- Signal
28	TXACP	LVDS ADD C+ Signal
29	TXB3N	LVDS BDD 3- Signal
30	TXB3P	LVDS BDD 3+ Signal

7.7 JP9 (4PIN/2.0): SPEAKER INTERFACE(喇叭接口)



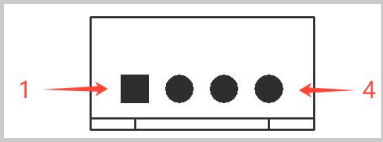
NO.(引脚)	Symbol(定义)	Description(描述)
1	ROUTP	Right Channel Output+(右声道输出+)
2	ROUTN	Right Channel Output-(右声道输出-)
3	LOUTN	Left Channel Output-(左声道输出-)
4	LOUTP	Left Channel Output+(左声道输出+)

7.8 JP3(10PIN/2.0): LAMP& KEY BOARD CONNECTOR(指示灯&按键控制接口)



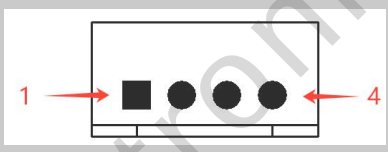
NO.(引脚)	Symbol(定义)	Description(描述)
1	3.3V	3.3V Power
2	R	Red LED(红色 LED)
3	G	Green LED(绿色 LED)
4	GND	Ground(地)
5	K1	按键信号输入
6	K2	按键信号输入
7	K3	按键信号输入
8	K4	按键信号输入
9	K5	按键信号输入
10	K6	按键信号输入

7.9 JP14 (4PIN/2.0): RX/TX-IN　INTERFACE(内置通讯接口)



NO.(引脚)	Symbol(定义)	Description(描述)
1	GND	Ground
2.	RX	UART_RX IN
3	TX	UART_TX IN
4	5V	5V

7.10.JP8 (4PIN/2.0): ADC CONTROL INTERFACE(内置 ADC 控制接口)



NO.(引脚)	Symbol(定义)	Description(描述)
1	3.3V	3.3V
2.	IO	I/O
3	ADC/IO	ADC/IO
4	GND	Ground